What Are Blockchains, and What Are They Good for?

SPEAKER

Chris Dixon, Andreessen Horowitz

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State of Crypto

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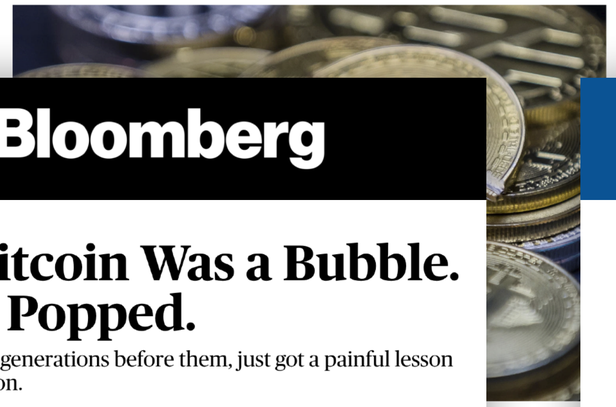
Crypto Skeptics in the Media

FORTUNE

THE LEDGER • BITCOIN

3 Reasons for the Crypto Collapse



WIRED

BRUCE SCHNEIER OPINION 02.06.2019 09:00 AM

There's No Good Reason to Trust Blockchain Technology

MIT Technology Review

In 2019, blockchains will start to become boring

After the Great Crypto Bull Run of 2017 and the monumental crash of 2018, blockchain technology won't make as much noise in 2019. But it will become more useful.

Bloomberg

Yep, Bitcoin Was a Bubble. And It Popped.

Millennials, like generations before them, just got a painful lesson about speculation.

Forbes

From Bitcoin To No Coin, Crypto World Under Pressure As Values Tumble

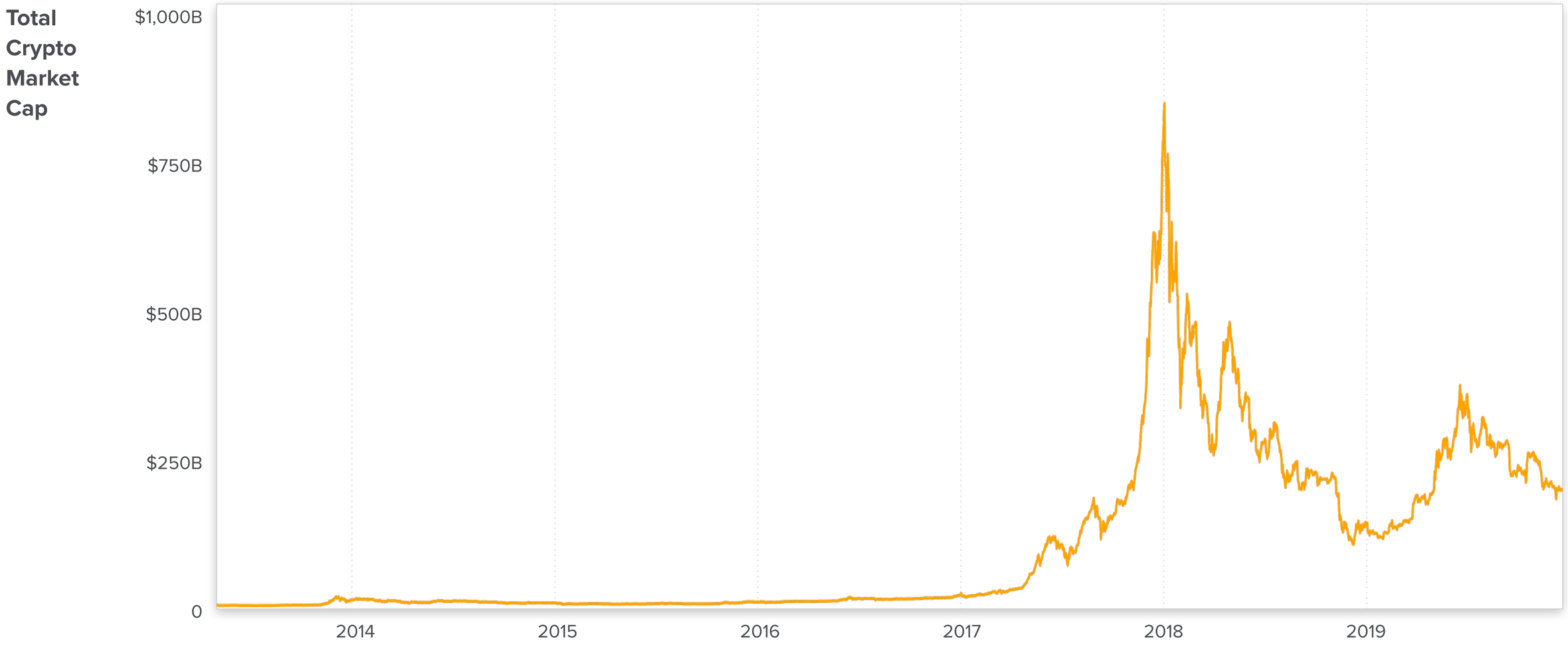
The New York Times

Bitcoin Has Lost Steam. But Criminals Still Love It.

The police hoped that taking down online black markets would chase away criminals. But the amount of Bitcoin spent on illegal purposes has reached a new high.

Crypto Skeptic's Perspective

"Crypto had a bubble in 2017, which then popped and the space lost momentum."



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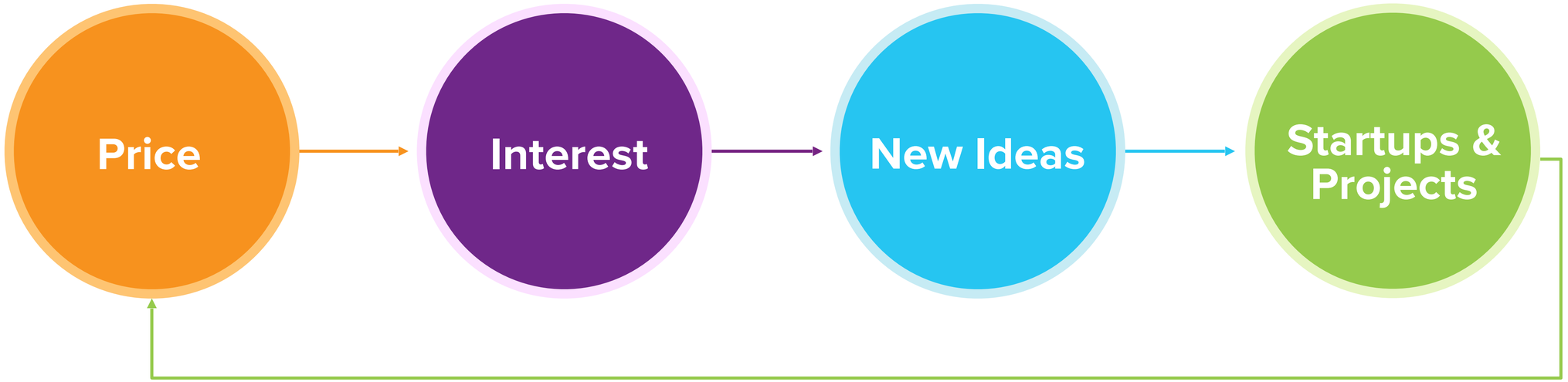
The Reality: Crypto Develops in Cycles That Appear Chaotic But Have an Underlying Order



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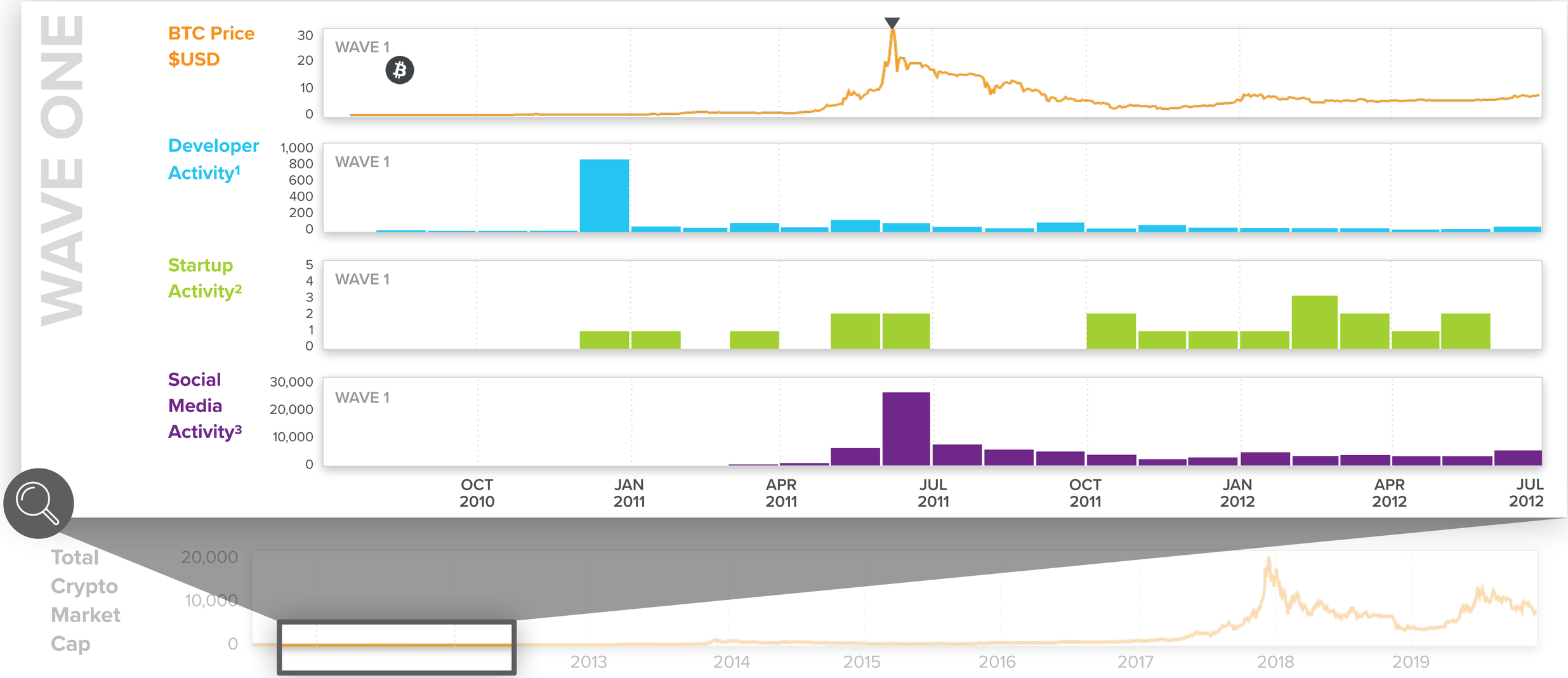
The Insiders' Take: First Wave of Innovation

2010–2012



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[1] Developer activity based on crypto stars on Github [2] Startup activity based on crypto first rounds funding via Pitchbook [3] Social media activity based on comments on crypto-related subreddits

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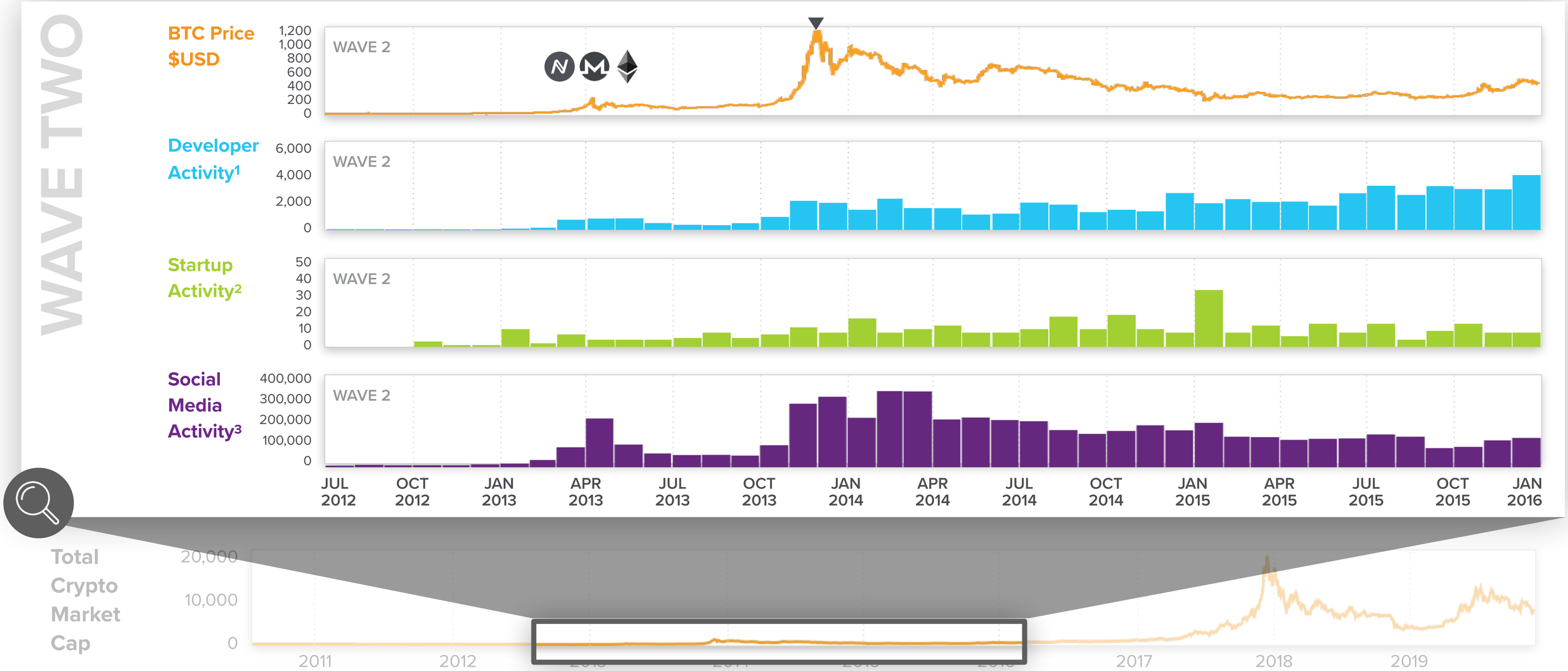
The Insiders' Take: Second Wave of Innovation

2012–2016



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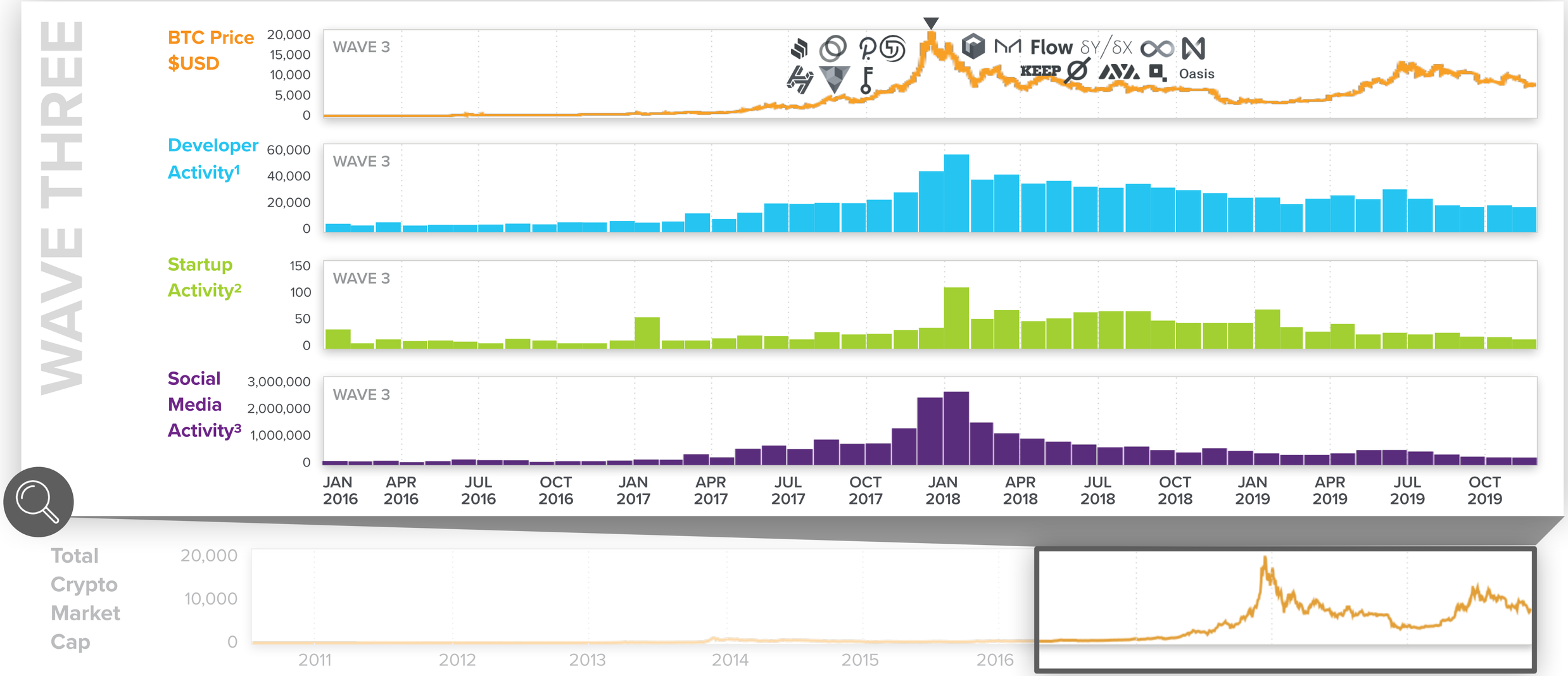
The Insiders' Take: Third Wave of Innovation

2016–2019



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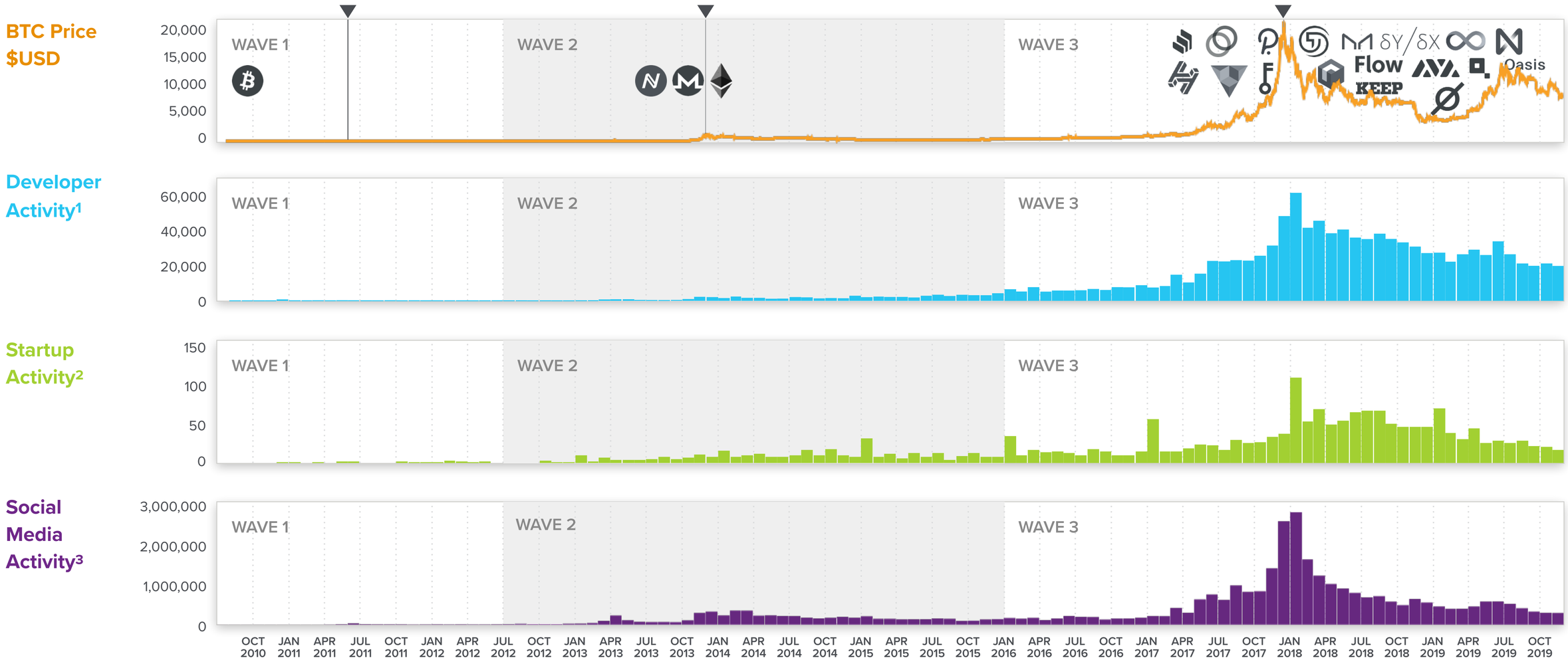
Crypto Innovation: All Waves

Crypto progresses in waves that from the outside look chaotic but have an underlying order



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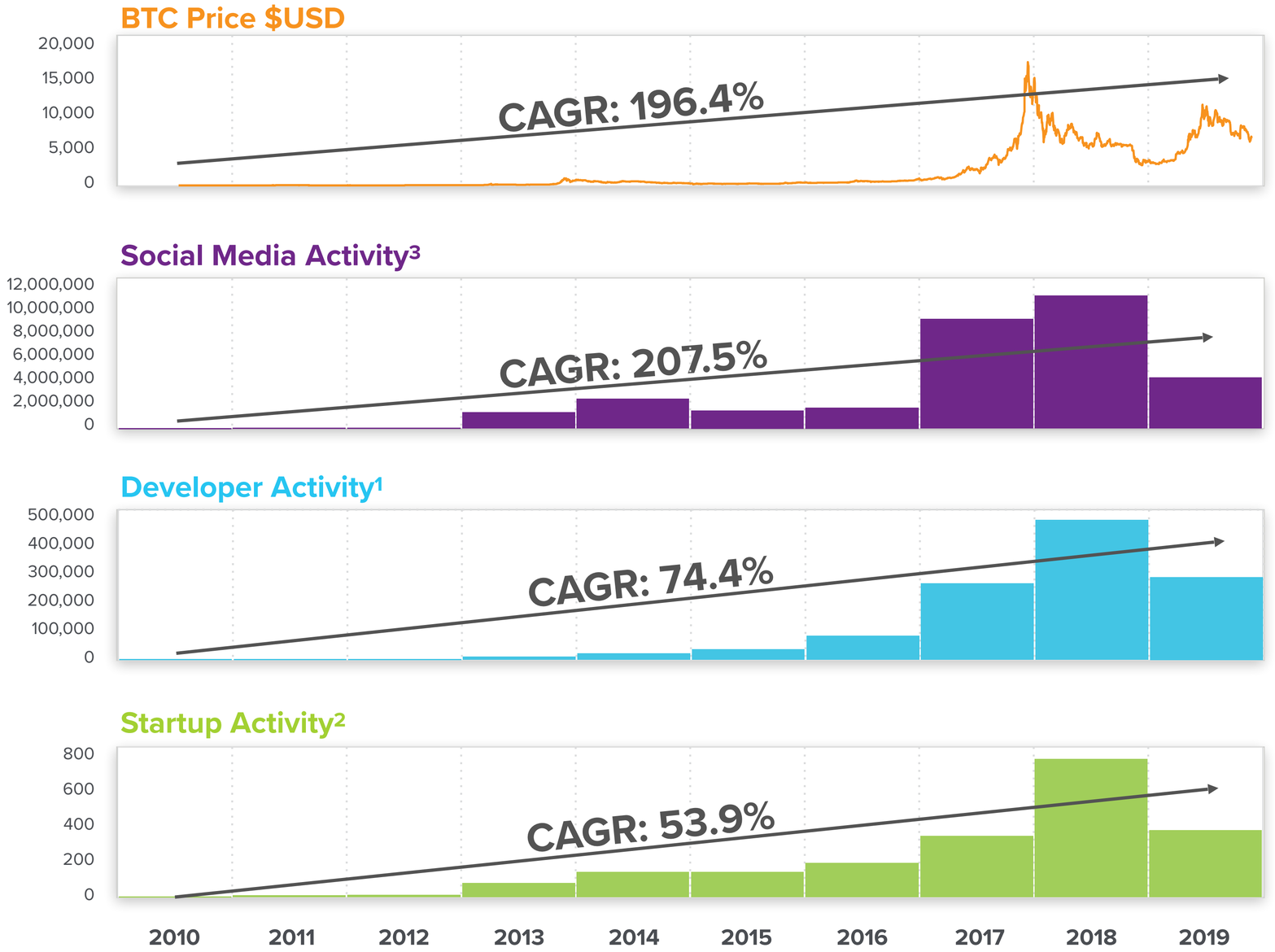
The result is consistent long-term growth, driven by a feedback loop between interest and innovation.



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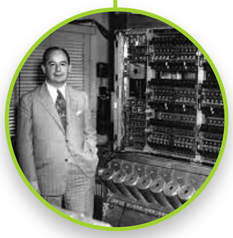
The best way to think of blockchains is as a new type of computer.

History of Computing Platforms

PAST

1930–1940s



1950–1960s

1970–1980s

1980–1990s

1990–2000s

2000–2010s

2020s & Beyond

2020s & Beyond

2020s & Beyond

2020s & Beyond

Blockchains

FUTURE

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Blockchain: A virtual computer that runs on top of a network of physical computers that provides strong, auditable, game-theoretic guarantees that the code it runs will continue to operate as designed.

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Computers That Can Make Commitments

EXAMPLE

Fixed Supply:
21 Million

No Double
Spend

Your Bitcoin Is
Yours

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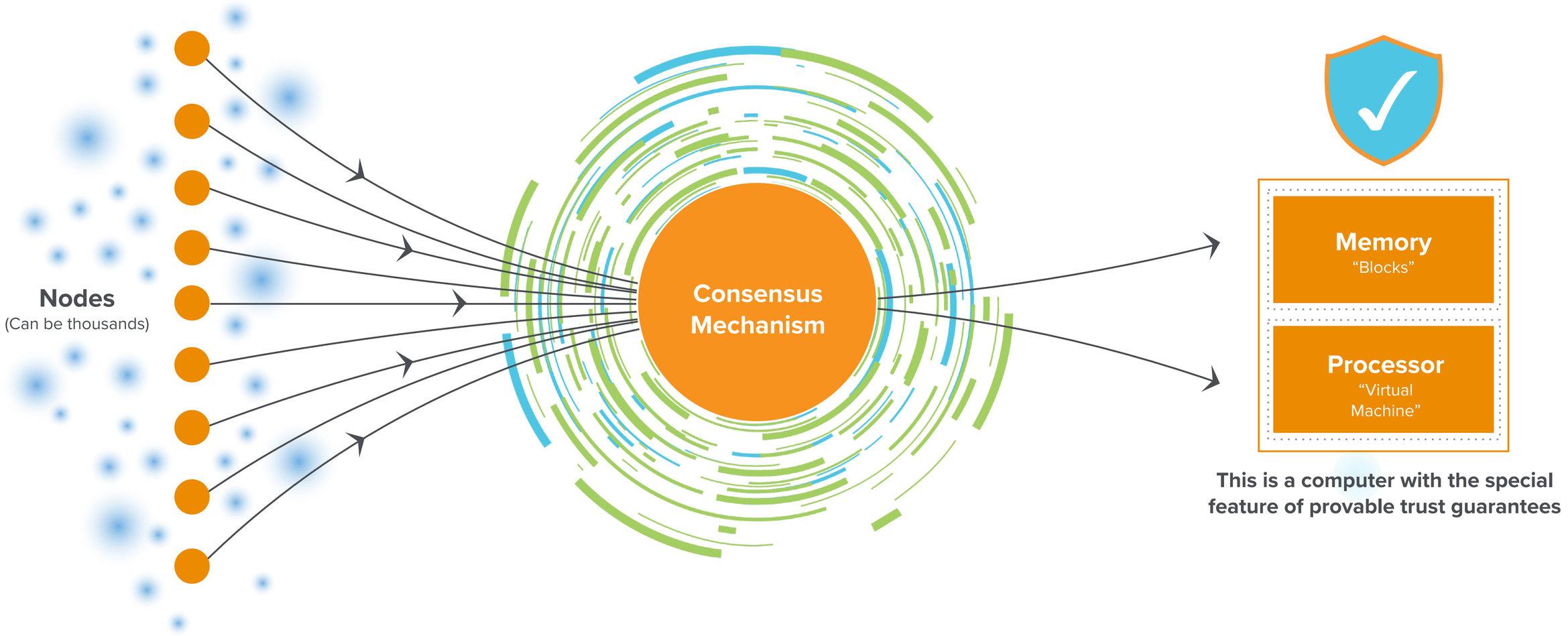
Architecture of Blockchain Computers

Computer composed of nodes which are physical computers (e.g. PCs), joined together via a consensus mechanism.



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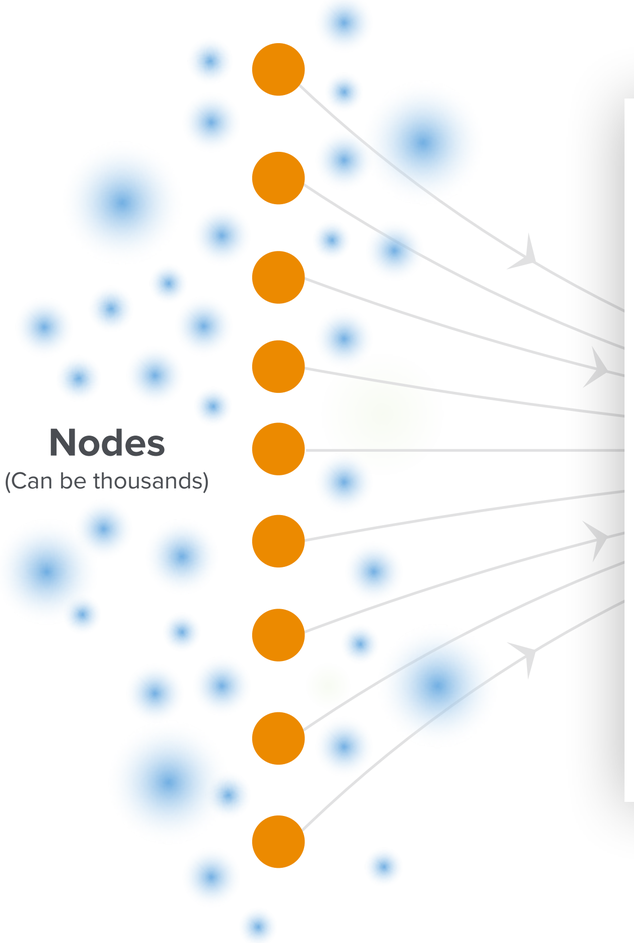
Nodes

Nodes are the method by which anyone—without needing permission—can join the network and become part of the blockchain computer.



Each node runs all or part of the code required to make the system function.

Nodes are incentivized to behave honestly, but a well-designed consensus mechanism enforces the correct operation of the blockchain computer even if a significant number of nodes misbehave.

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Consensus Mechanism

Consensus mechanism aggregates the “votes” from the nodes to determine the correct operation of the blockchain computer.

The rounds of voting are broken into “blocks” which are then chained together, hence the term “blockchain.”

A well-designed consensus mechanism gives mathematically provable guarantees about trustworthiness of the computer as a whole.

feature of provable trust guarantees

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The Result: Trust Guarantees

The game theory of nodes + consensus mechanism provides trust guarantees to anyone using it—users, developers, creators, businesses, other computers or services—that no previous computer architecture could provide.

These trust guarantees means that the rules of the system can't change without due process as defined by the system's governance protocols. "Don't be evil" becomes "Can't be evil."

These trust guarantees also enable the credible creation of new computing primitives such as digital money, digital goods, smart contracts, decentralized organizations, etc.

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Like All Early Computers, Blockchain Computers Have Strengths and Weaknesses

	Strengths	Weaknesses
Early PCs	Smaller, cheaper	Slow, expensive, user experience
Early Smartphones	Portable, GPS, camera, cellular connectivity	Performance, price, inputs (keyboard)
Early Blockchains	Provable trust guarantees	Scalability, user experience

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Killer Apps Took Advantage of Strengths: Weaknesses Diminished Over Time.

	Killer Apps
PCs	Word processing, spreadsheet, desktop publishing *Took advantage of price/size to become ubiquitous*
Smartphones	Ride hailing, photo sharing *Took advantage of GPS, camera, connectivity, portability*
Blockchains	Trust enables new digital primitives: *Digital money, digital goods, smart contracts, DAOs, trusted software platforms, community owned and operated digital services, + much more as-yet-invented?*

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Computers Can Be General Purpose or Application Specific

General Purpose	Application Specific
DEC minicomputer	Wang word processor
WWW	AOL
iPhone	Blackberry
Apple Watch	Fitbit
Ethereum	Bitcoin
BENEFIT: Unlocks third-party developer creatively	**BENEFIT:** Optimize full-stack for specific application

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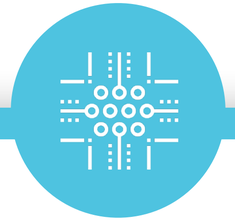
Crypto Landscape



Supporting Infrastructure

coinbase

ANCHORAGE

BisonTrails

Store of Value Blockchains

bitcoin

chia

MONERO

Zcash

Payment Blockchains

celo

libra

Smart Contracts Blockchains: Platforms & Apps

ethereum

DFINITY

rally

Compound

NEAR

MAKER

Flow

Uniswap

OASIS LABS

NUMERAI

Other/Emerging Blockchains

ARWEAVE

handshake

Filecoin

FORTE

sia

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PAYMENT BLOCKCHAINS

Mobile Peer-to-peer Payments

celo

libra

Source: celo.org

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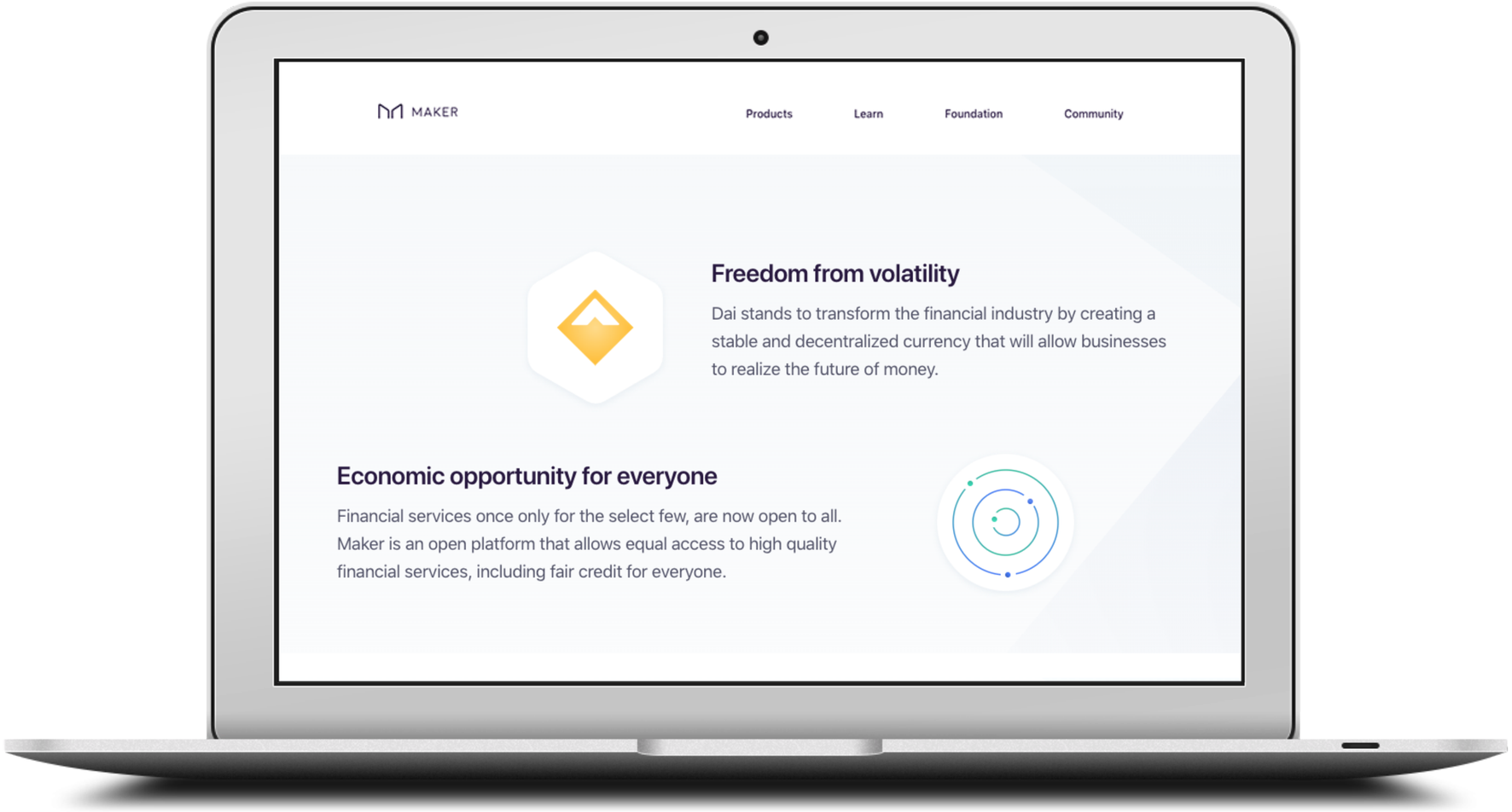
SMART CONTRACT BLOCKCHAINS

Decentralized Finance


MAKER
Products
Learn
Foundation
Community
Freedom from volatility
Dai stands to transform the financial industry by creating a stable and decentralized currency that will allow businesses to realize the future of money.
Economic opportunity for everyone
Financial services once only for the select few, are now open to all. Maker is an open platform that allows equal access to high quality financial services, including fair credit for everyone.

Compound

MAKER

Source: makerdao.com

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OTHER EMERGING BLOCKCHAINS

Gaming/NFTs

rally

FORTE

Flow

source: https://superrare.co/artwork/ai-generated-nude-portrait-1-1

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[CRYPTO STARTUP SCHOOL]